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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/036,501      | 01/07/2002  | Hans Jorg Heger      | 1454.1209           | 3549             |

21171 7590 11/03/2004

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EXAMINER

CHAWAN, SHEELA C

ART UNIT PAPER NUMBER

2625

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/036,501

Applicant(s)

HEGER ET AL.

Examiner

Sheela C Chawan

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 January 2002.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-11 is/are rejected.  
7) ☒ Claim(s) 1,3 and 10 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 07 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/7/02; 6/6/03.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

2. The Examiner has approved drawings filed on 10/9/03.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 1, 3, 11 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, recites the limitation "retrieve a part of the image having the highest ratio of content to outer sides" in line 3. What does it mean by part of the image having highest ratio of content to outer sides? As recited it is unclear. Please explain.

As to claim 10 see the rejection of claim 1.

As to claim 11 see the rejection of claim 1.

As to claim 3, recites the limitation "a geometric object can be inscribed in the image". What does it mean by a geometric object can be inscribed in the image? As

recited is unclear. Please explain. Examiner will address these claims as best understood.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Grzeszczuk et al., (US. 6,788,809 B1).

As per claim 1, Grzeszczuk discloses an arrangement for registering a hand on an arm (fig 3a, column 2, lines 44- 49) comprising:

a supply unit to supply at least a partial image of the hand and the arm (fig 1, element 10, stereo camera capturing image of the hand and the arm, In fig 3a the bounding box corresponds to the projection of the region surrounding the hand onto the view plane, column 3, lines 45- 53, column 4, lines 17-20); and

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a search unit to retrieve a part of the image (stereo camera detect hand, column 2, lines 44- 49, column 7, lines 45- 67, column 8, lines 1- 4), having the highest ratio of content to outer sides (column 8, lines 11-16; the number of hand pixels corresponds to content or area or volume and the non-hand pixels corresponds to the outer sides or outer area).

As per claim 2, Grzeszczuk discloses the arrangement, wherein the high ratio of content to outer sides is approximately the highest ratio of content to outer sides (column 8, lines 11-16; the number of hand pixel corresponds to content or area or volume and the non-hand pixels correspond to the outer sides or outer area).

As to claim 3, Grzeszczuk discloses the arrangement, wherein the search unit are constructed such that a geometric object (note, the hand region is defined as a cylinder corresponds to geometric object, see column 7, lines 63- 64), can be inscribed (note, only the pixels value that are classified as hand pixels are draw inside the bounding box that defines the hand region which corresponds to inscribed image, see column 8, lines 1- 4), in the image.

As per claim 4, Grzeszczuk discloses the arrangement, wherein the geometric object can be inscribed repeatedly at different positions in the image (note, a hand pose estimation is based on computing the coordinated of the center of the hand and the absolute orientation of the hand in relation to the camera, column 5, lines 38- 52), and the part of the image can be found where the geometric object can be inscribed at its largest (column 6, lines 10- 48, column 7, line 63 through column 7, lines 16).

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As to claim 5, Grzeszczuk discloses the arrangement, wherein the geometric object is a circle, a rectangle, a polygon, a cube and/or a body of rotation, in particular a sphere (note, the hand region is defined as a cylinder which corresponds to the geometric object, see column 7, lines 63- 64).

As to claim 6, Grzeszczuk discloses the arrangement, wherein the arrangement has means for determining the position of the hand on the basis of the position of the part of the image (column 6 lines 10- 25).

As to claim 7, Grzeszczuk discloses the arrangement, wherein the arrangement is set up to carry out hand recognition (column 1, lines 25- 54, column 8, line 66 through column 9, line 11).

As to claim 8, Grzeszczuk discloses the arrangement, wherein the arrangement has means for identifying the hand in an environment (column 2, lines 19- 65).

As to claim 9, Grzeszczuk discloses the arrangement, wherein the center of the hand can be determined (column 5, lines 38-52).

As to claim 10 see the rejection of claim 1.

As to claim 11, claim 11, recites similar limitation as claim 1 above and therefore similarly analyzed. Grzeszczuk discloses a computer readable medium storing a program to control a computer to perform a method (fig 1, column 2, line 54 through column 3, line 35).

***Other prior art cited***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Freeman (US.5,454,043) discloses dynamic and static hand gesture recognition through low-level image analysis.

Smith et al., (US, 6,128,003) discloses hand gesture recognition system and method.

Maggioni et al., (US. 5,751,843) discloses method for detecting the spatial position and rotational position of suitably marked objects in digital image sequences.


Wadia (US.4, 720,869) discloses hand dimension verification.

***Contact Information***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is 703-305-4876. The examiner can normally be reached on Monday - Thursday 8 - 6.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703-308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Sheela Chawan  
Patent Examiner  
Group Art Unit 2625  
October 18, 2004